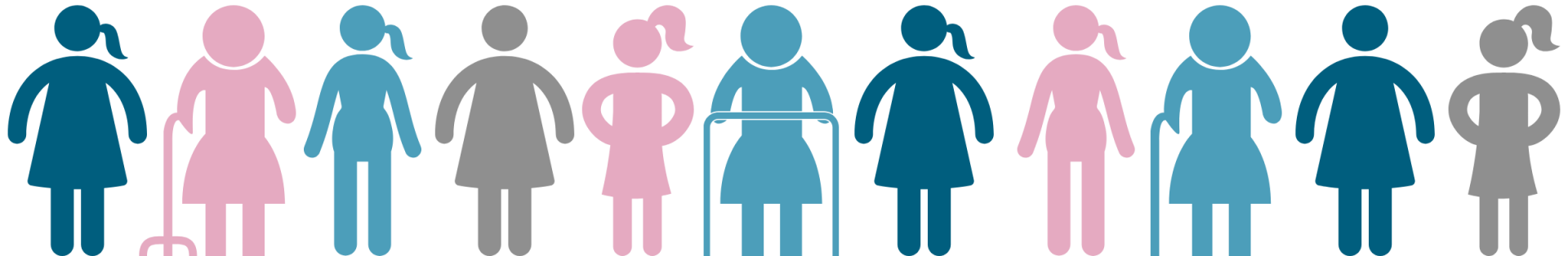
DBCG
Repræsentantskabsmøde
16. januar 2023

Billeddiagnostik ved metastatisk brystkræft & LABC stadieinddeling

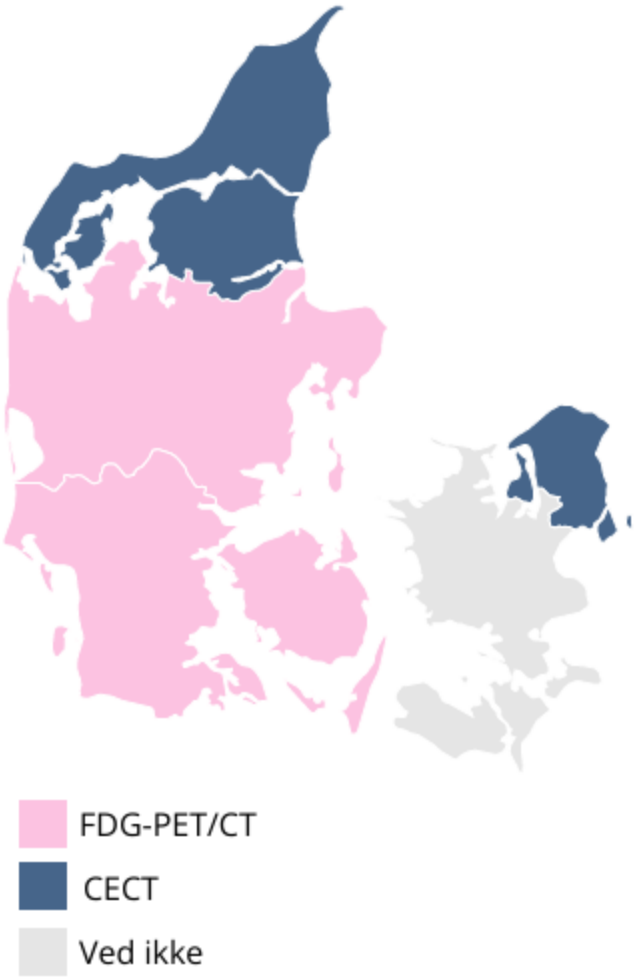
GUIDELINES

Malene Grubbe Hildebrandt



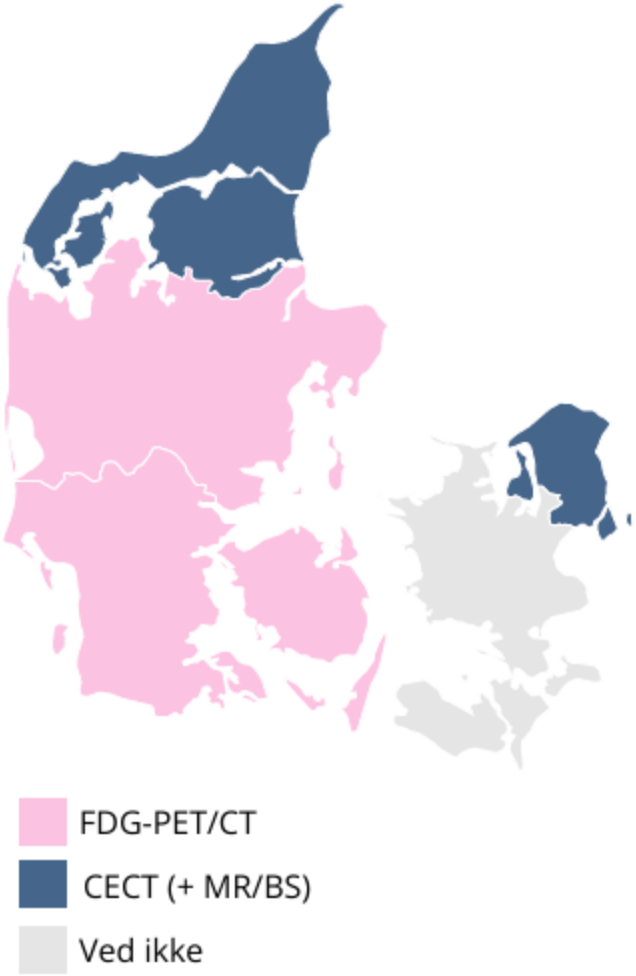
LABC stadieinddeling

TODAY'S PRACTICE



LABC stadieinddeling

TODAY'S PRACTICE



Billediagnostik MBC

FDG-PET/CT

CECT

Ved ikke

TODAY'S PRACTICE

Billediagnostik MBC

TODAY'S PRACTICE

FDG-PET/CT

CECT (+MR/BS)

Ved ikke

DBCG

AKTUELLE
RETNINGSLINJER

EVIDENS

NYT
RETNINGSLINJEUDKAST

EMNER

aktuelle retningslinjer

DBCG

Klinik	Anbefalet udredning	Evt. supplerende udredning	Evidens	Andel fjernmetastaser	Kapitel, Udgivet
MBC	Klinisk, biokemisk og billeddiagnostisk	-	Ingen	15-20% på 10 år	Syst. Beh. BK III Mar 21

aktuelle retningslinjer

DBCG

Klinik	Anbefalet udredning	Evt. supplerende udredning	Evidens	Andel fjernmetastaser	Kapitel, Udgivet
MBC	Klinisk, biokemisk og billeddiagnostisk	-	Ingen	15-20% på 10 år	Syst. Beh. BK III Mar 21
LABC	CT (T-AB-PEL)	MR-mamma MR columna	Ej angivet	20-30%	Primær lokal/reg fremskreden BK Okt 20

aktuelle retningslinjer

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Lokoregionalt recidiv	CT (T-AB)	PET/CT MR UL	Ej angivet	En del	Lokoreg recidiv ved BK Apr 22

aktuelle retningslinjer

DBCG

Klinik	Anbefalet udredning	Evt. supplerende udredning	Evidens	Andel fjernmetastaser	Kapitel, Udgivet
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Lokoregionalt recidiv	CT (T-AB)	PET/CT MR UL	Ej angivet	En del	Lokoreg recidiv ved BK Apr 22
Respons-evaluering MBC	Relevante parakliniske undersøgelser RECIST ved CT/MR	-	Uklart	100%	Syst. Beh. BK III Mar 21

aktuelle retningslinjer

DBCG

Klinik	Anbefalet udredning	Evt. supplerende udredning	Evidens	Andel fjernmetastaser	Kapitel, Udgivet
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Lokoregionalt recidiv	CT (T-AB)	PET/CT MR UL	Ej angivet	En del	Lokoreg recidiv ved BK Apr 22
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aktuelle retningslinjer

DBCG

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ESMO guidelines

GUIDE-LINES

STAGING MBC

Examination

- The minimum imaging work-up for staging includes computed tomography (CT) of the chest and abdomen and bone scintigraphy [II, A].
- [^{18}F]2-fluoro-2-deoxy-D-glucose (^{18}F-FDG) positron emission tomography (PET)–CT may be used instead of CT and bone scans [II, B].[18,19]
- There is no evidence that any staging or monitoring approach provides an OS benefit over another.[19]
- The imaging modality chosen at baseline should be applied for disease monitoring to ensure comparability [III, B].

Oktober 2021

Gennari, et al. Ann Oncol. 2021: https://doi.org/10.1016/j.annonc.2021

ESMO guidelines

GUIDE-LINES

STAGING MBC

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Oktober 2021

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ESMO

STAGING

GUIDE-LINES

Follow-up

- The interval between imaging and treatment start should be ≤ 4 weeks.
- Evaluation of response should generally occur every 2-4 months depending on dise location, extent of metastasis and type of treatment [V, B].[18]
- Disease monitoring intervals should not be shortened as there is no evidence of an OS benefit but potential for emotional and financial harm [IV, D].[20] Less frequent monitoring is acceptable, particularly for indolent disease.
- If progression is suspected, additional tests should be carried out in a timely manner irrespective of planned intervals [V, B].[18]
- Repeat bone scans are a mainstay of evaluation for bone-only/predominant metastases, but image interpretation may be confounded by a possible flare during the first few months of treatment [III, C].[19]
- PET-CT might provide earlier guidance in monitoring bone-only/predominant metastases, but prospective trials are needed to study the impact on treatment decisions and OS [III, C].[19,21]
- Impending fracture risk should be evaluated by CT or X-rays. The spine instability neoplastic score provides reproducible risk assessment for vertebral metastases.[22] In case of suspected cord compression, magnetic resonance imaging (MRI) is the modality of choice [I, A].
- Brain imaging should not be routinely carried out in all asymptomatic patients at initial MBC diagnosis or during disease monitoring. Patients with asymptomatic HER2-positive BC or TNBC have higher rates of brain metastases (BMs) at initial MBC diagnosis, even as the first site of recurrence. This may warrant subtype-oriented brain imaging in asymptomatic patients with MBC if detection of CNS metastases will alter the choice of systemic therapy [V, C]. Randomised trials to determine the risks and benefits of brain screening are still underway (NCT03881605).[23]
- Symptomatic patients should always undergo brain imaging, preferably with MRI [II, B].

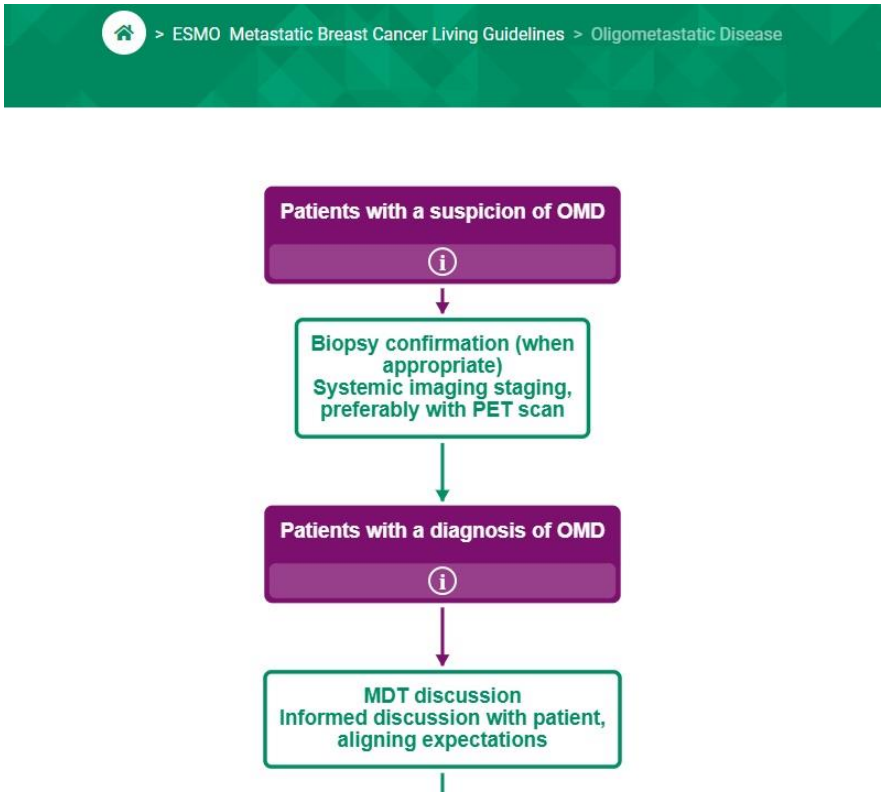
Gennari, et al. Ann Oncol. 2021: https://doi.org/10.1016/j.annonc.2021

Oktober 2021

ESMO guidelines

GUIDE-LINES

PET/CT til OMD



Gennari, et al. Ann Oncol. 2021: https://doi.org/10.1016/j.annonc.2021

GUIDE-LINES

ESMO guidelines

FOR ABC (INKL. LABC)

Section III. Assessment and treatment general guidelines		
Guideline statement	**LoE/GoR**	**Consensus**
Image and disease assessment guidelines		
Minimal staging work-up for ABC includes a history and physical examination, haematology and biochemistry tests and imaging of the chest, abdomen and bones.	II/A	67%
Brain imaging should not be routinely performed in asymptomatic patients. This approach is applicable to all patients with ABC, including those with HER2-positive and/or triple-negative ABC.	II/D	94%

Cardoso, et al. Ann Oncol. 2020: https://doi.org/10.1016/j.annonc.2020.09.010

ESMO guidelines

FOR ABC (INKL. LABC)

Section III. Assessment and treatment			
Guideline statement			
Image and disease assessment guideli			
Minimal staging work-up for ABC incl history and physical examination, haematology and biochemistry tes imaging of the chest, abdomen and	Evaluation of response to therapy should generally occur every 2-4 months for ET or after 2-4 cycles for ChT, depending on the dynamics of the disease, the location and extent of metastatic involvement and type of treatment. Imaging of a target lesion may be sufficient in many patients. In certain patients, such as those with indolent disease, less frequent monitoring is acceptable. Additional testing should be performed in a timely manner, irrespective of the planned intervals, if PD is suspected or new symptoms appear. A thorough history and physical examination must always be performed.	Expert opinion/B	81%
Brain imaging should not be routinely performed in asymptomatic patien approach is applicable to all patier ABC, including those with HER2-pc and/or triple-negative ABC.			

Cardoso, et al. Ann Oncol. 2020: https://doi.org/10.1016/j.annonc.2020.09.010

DBCG & ESMO guidelines

STAGING MBC

Klinik	Anbefalet udredning	Supplerende /alternativ udredning	Anbefalet udredning	Supplerende /alternativ udredning
	DBCG		ESMO	
MBC	Klinisk, biokemisk og billeddiagnostisk	-	CT (T-AB) + BS	FDG-PET/CT
LABC	CT (T-AB-PEL)	MR-mamma MR columna		
Lokoregionalt recidiv	CT (T-AB)	PET/CT MR UL		

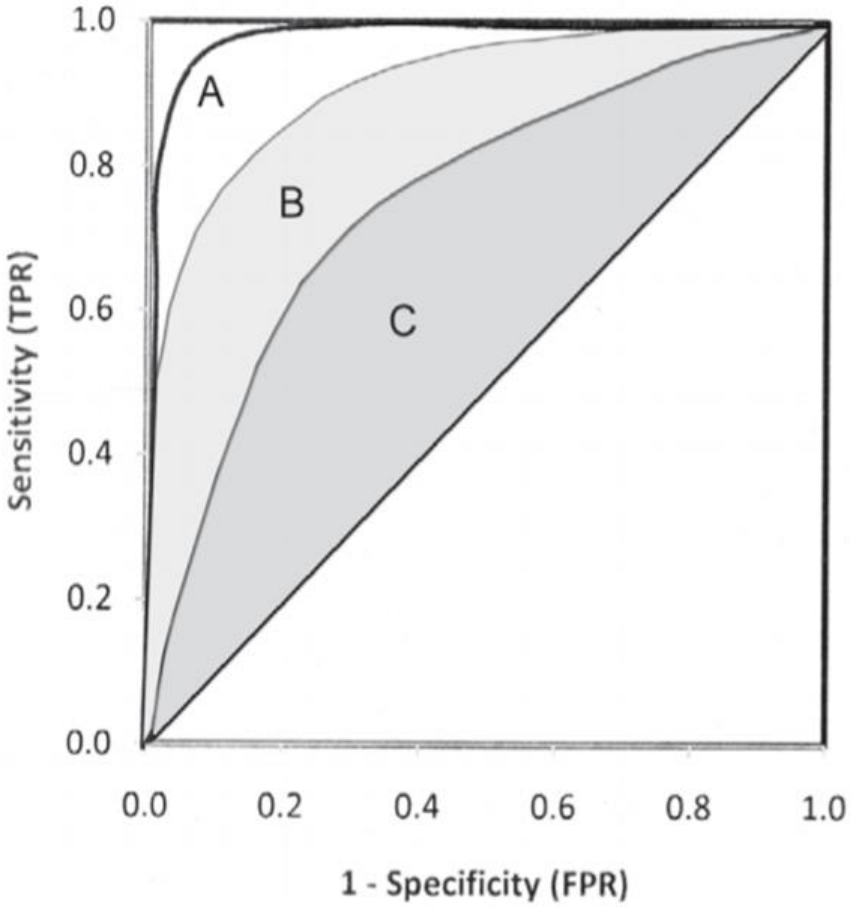
DBCG & ESMO guidelines

STAGING MBC

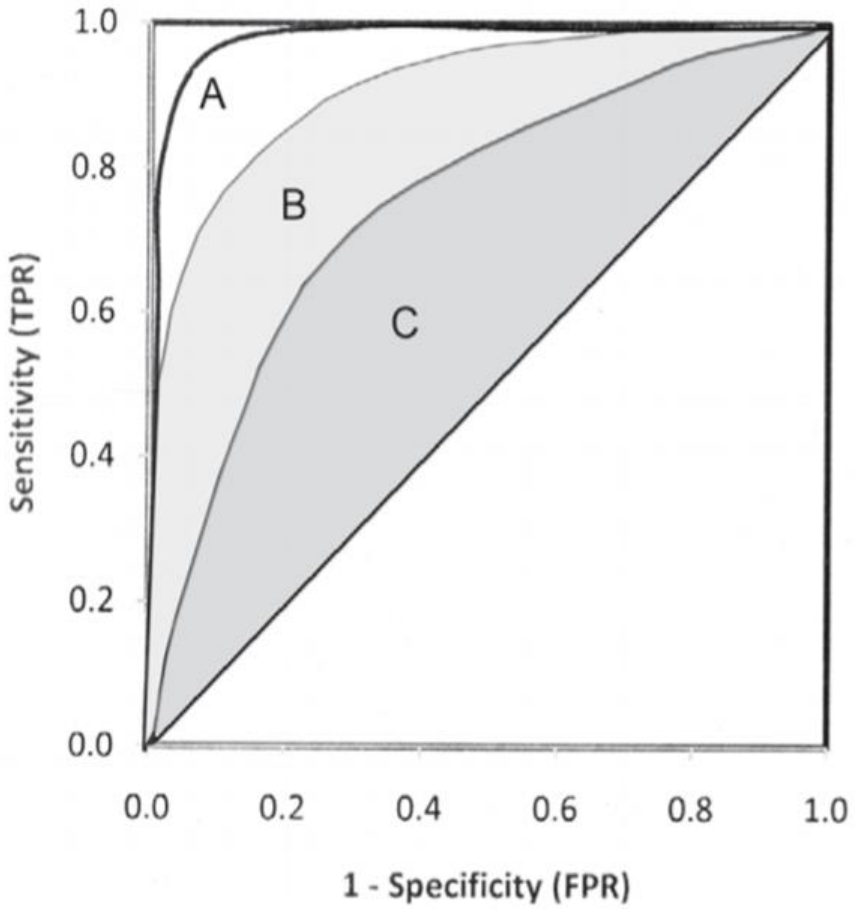
Klinik	Anbefalet udredning	Supplerende /alternativ udredning	Anbefalet udredning	Supplerende /alternativ udredning
	DBCG		ESMO	
MBC	Klinisk, biokemisk og billeddiagnostisk	-	CT (T-AB) + BS	FDG-PET/CT
LABC	CT (T-AB-PEL)	MR-mamma MR columna		
Lokoregionalt recidiv	CT (T-AB)	PET/CT MR UL		
Respons-evaluering MBC	Relevante parakliniske undersøgelser RECIST ved CT/MR	-	Target lesion	FDG-PET/CT (bone only/pre-dominant MBC)

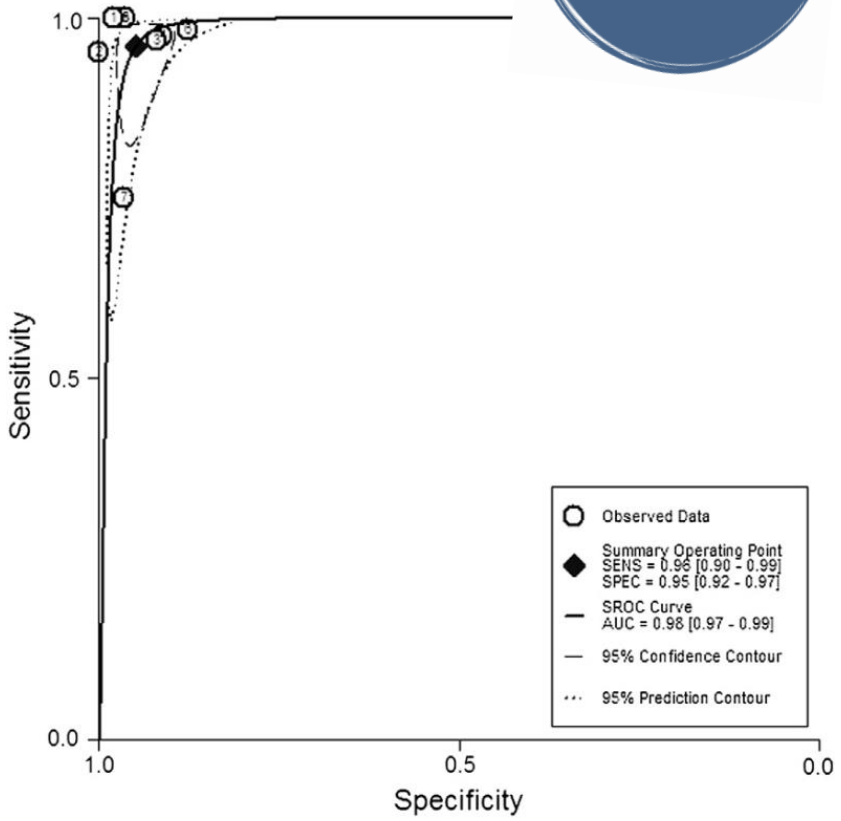
Diagnostiske studier

EVIDENS



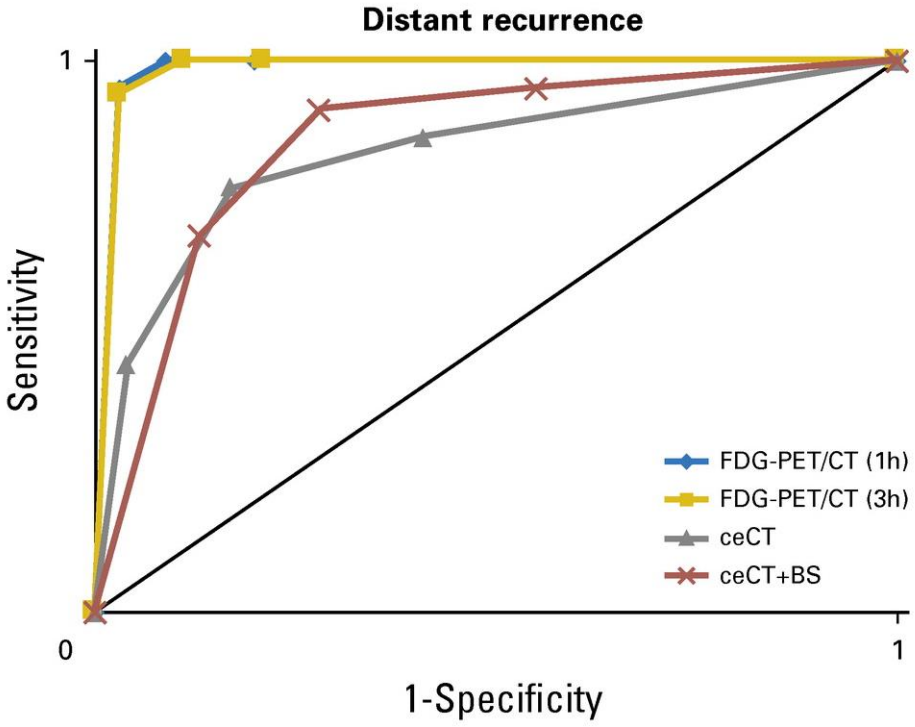
Diagnostiske studier

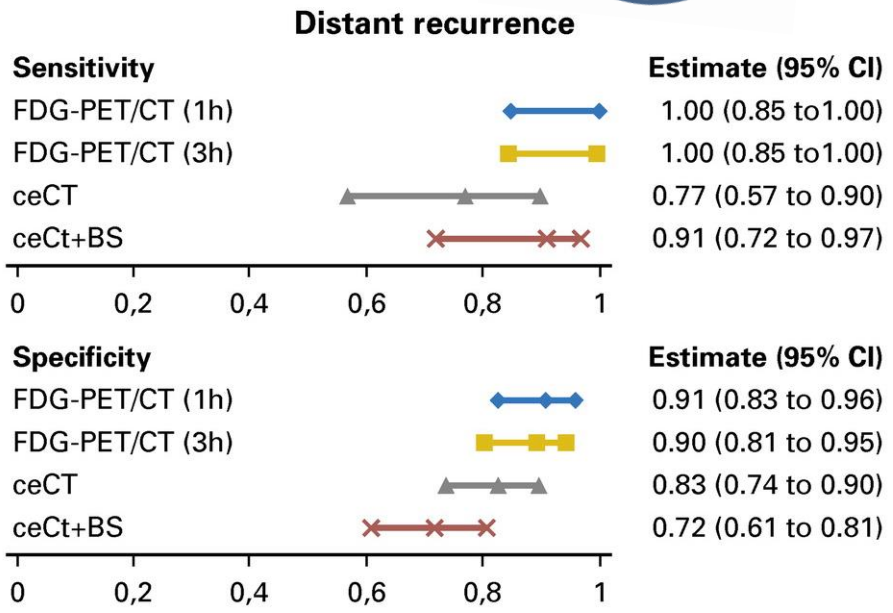




Hong S, Li J, Wang S. 18FDG PET-CT for diagnosis of distant metastases in breast cancer patients. A meta-analysis. Surgical oncology. 2013;22(2):139-43.

Recidivudredning

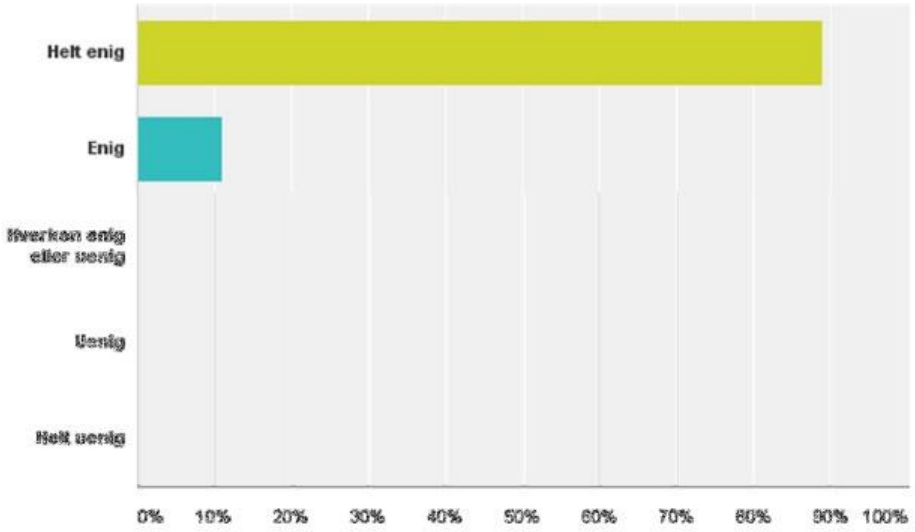




Hildebrandt et al., J Clin Oncol, 2016 - https://doi.org/10.1200/jco.2015.63.5185

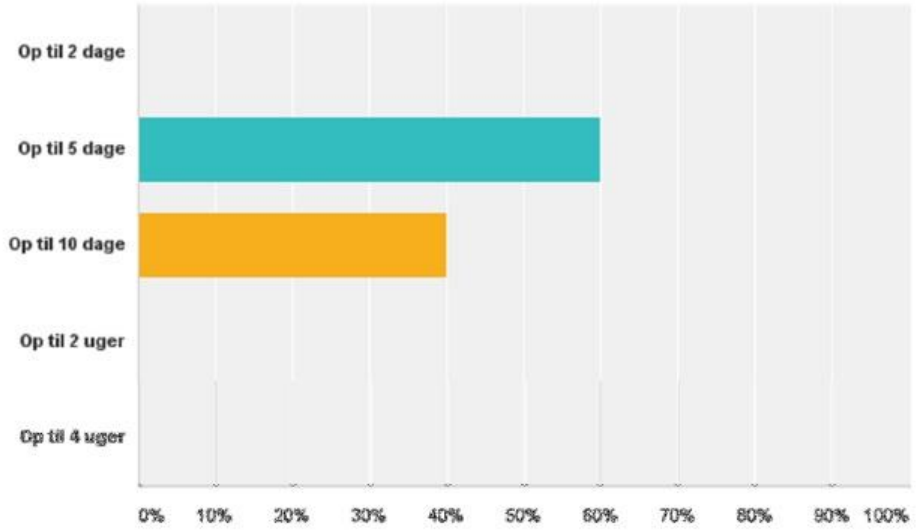
Patientværdier og præferencer

Det er af stor betydning for mig, at jeg kan være helt sikker på at være rask (fri for kræft), når jeg ud fra undersøgelsen er blevet erklæret 'rask':



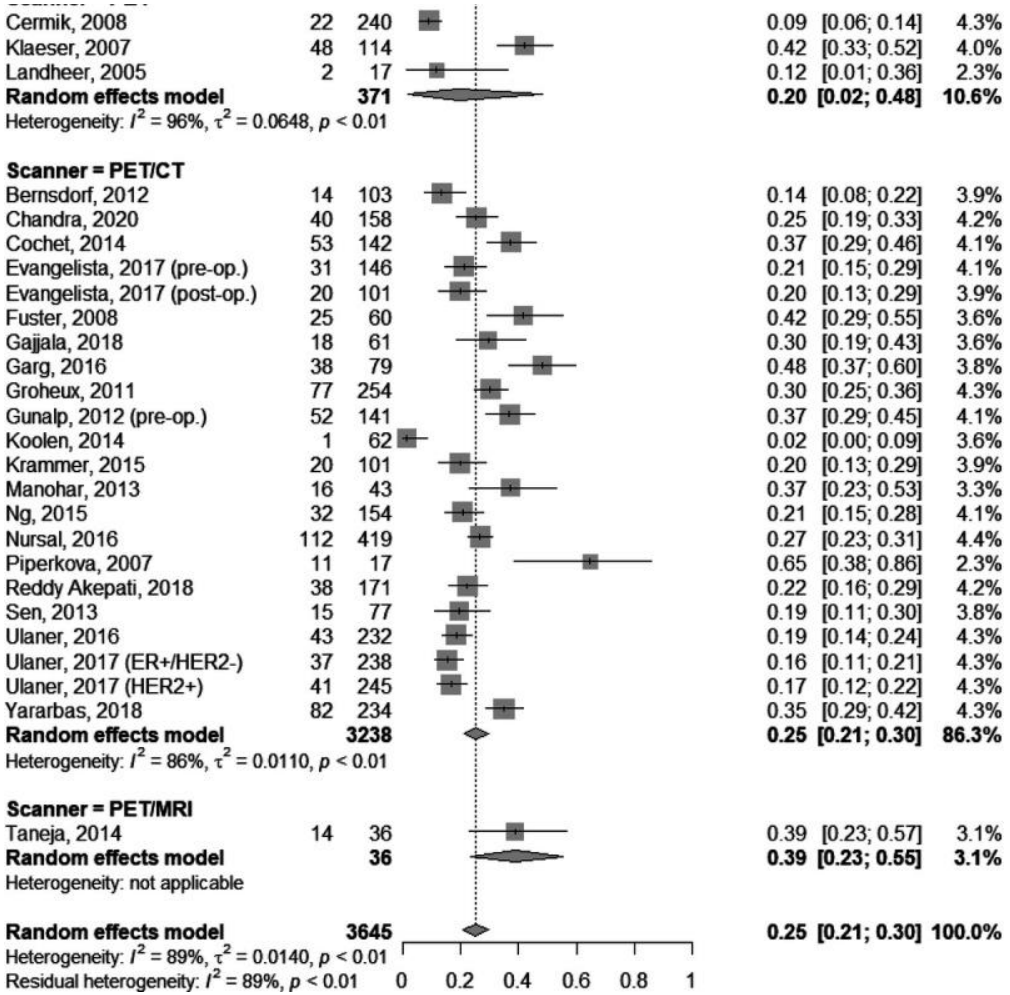
Patientværdier og præferencer

Nogle gange er der ventetid på undersøgelsens svar. Hvor lang svartid vil være acceptabelt for dig, hvis du skulle undersøge for tilbagefald af din brystkræftsygdom?
Svarmulighederne repræsenterer den tid, der kan gå efter, at du har fået foretaget undersøgelsen til du modtager svaret



LABC stadieinddeling

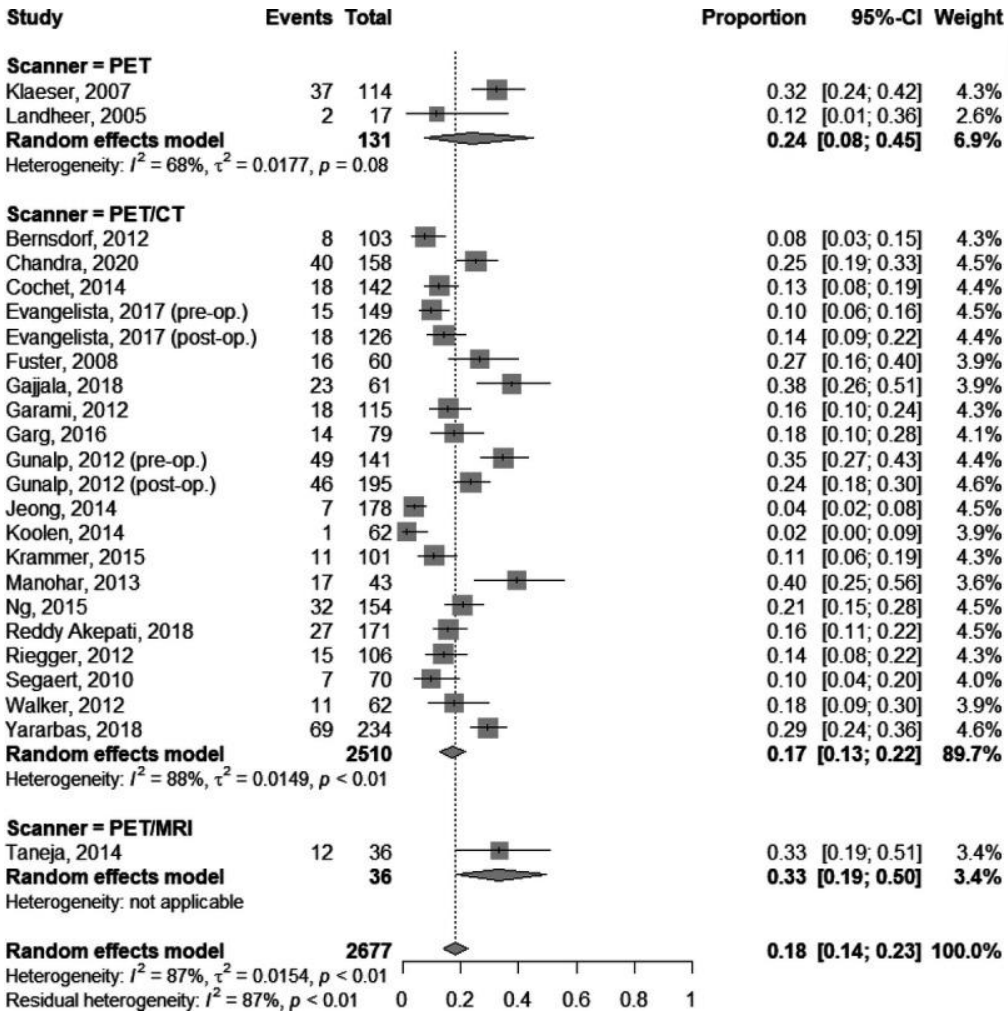
EVIDENS



Han et al., Clin Nucl Med. 2021 Apr 1;46(4):271-282. doi: 10.1097/RLU.0000000000003502

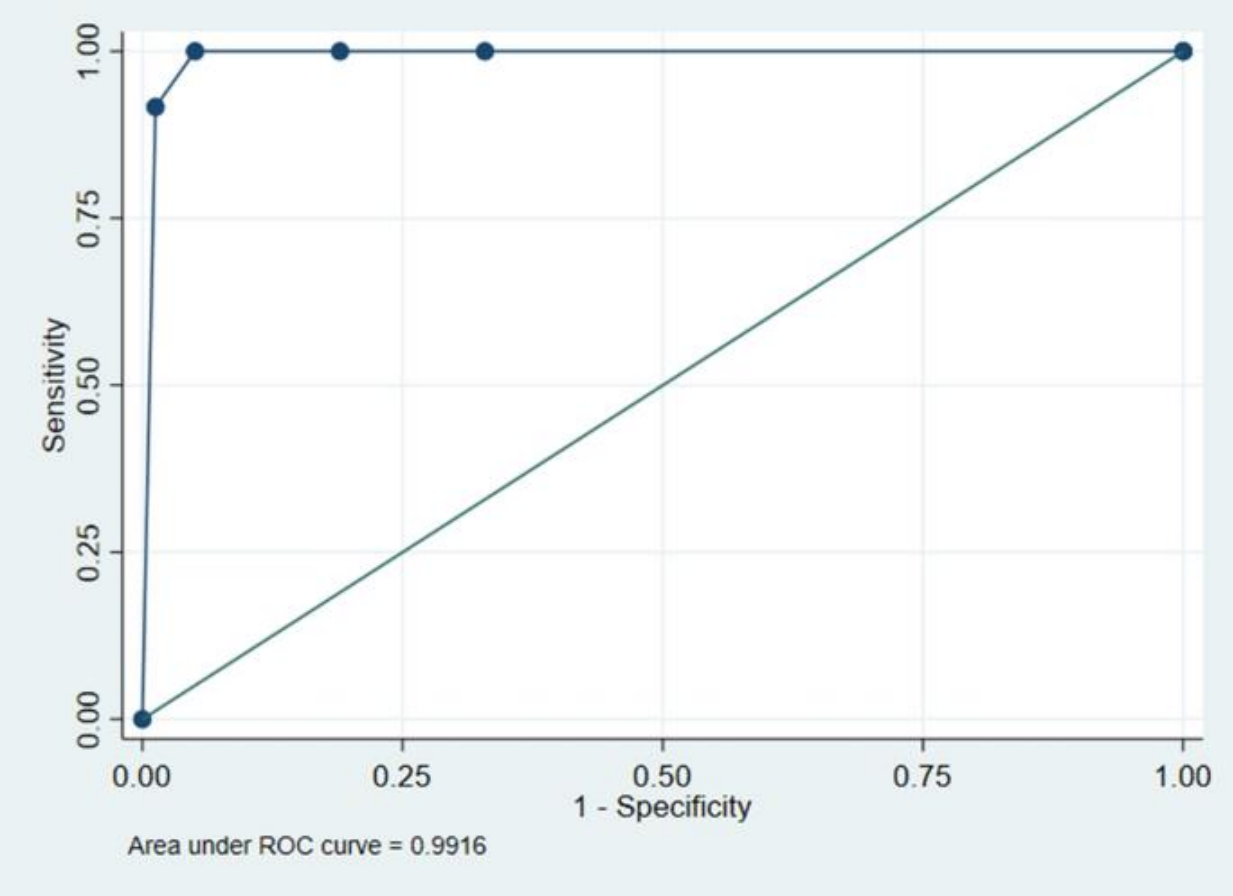
LABC stadieinddeling

EVIDENS



Han et al., Clin Nucl Med. 2021 Apr 1;46(4):271-282. doi: 10.1097/RLU.0000000000003502

LABC stadieinddeling



Vogsen M, et al. Breast Cancer Res Treat. 2021 Jan;185(1):145-153. doi: 10.1007/s10549-020-05929-3.

LABC stadieinddeling

N=103	Change in stage and management	Distant metastases	More advanced loco-regional
	39%	23%	16%

Vogsen M, et al. Breast Cancer Res Treat. 2021 Jan;185(1):145-153. doi: 10.1007/s10549-020-05929-3.

DBCG retninglinje

FORESLÅET 2022

Stadieinddeling af patienter med lokalavanceret brystkræft (LABC)

Anbefaling

1. **Til stadieinddeling af LABC før behandling, anbefales FDG-PET/CT af hals, thorax, abdomen og bækken (A)**

2. **Alternativt kan udredning med CT suppleret med MR, knogleskintigrafi eller NaF-PET anvendes (B)**

DBCG retninglinje

FORESLÅET 2022

Udredning for metastatisk brystkræft ved mistanke om fjernrecidiv

1. **Ved klinisk mistanke om fjernrecidiv af brystkræft, anbefales udredning for metastatisk sygdom med FDG-PET/CT af hals, thorax, abdomen og bækken (A)**

2. **Alternativt kan udredning med CT suppleret med MR, knogleskintigrafi eller NaF-PET anvendes (B)**

NEW

DBCG retninglinje

FORESLÅET 2022

Udredning for metastatisk brystkræft ved mistanke om fjernrecidiv

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2. **Alternativt kan udredning med CT suppleret med MR, knogleskintigrafi eller NaF-PET anvendes (B)**

Udredning for metastatisk brystkræft ved verificeret lokalrecidiv

3. **Ved biopsiverificeret lokoregionalt recidiv, anbefales udredning for metastatisk sygdom med FDG-PET/CT af hals, thorax, abdomen og bækken (A)**

4. **Alternativt kan udredning med CT suppleret med MR, knogleskintigrafi eller NaF-PET anvendes (B)**

Responsevaluering MBC

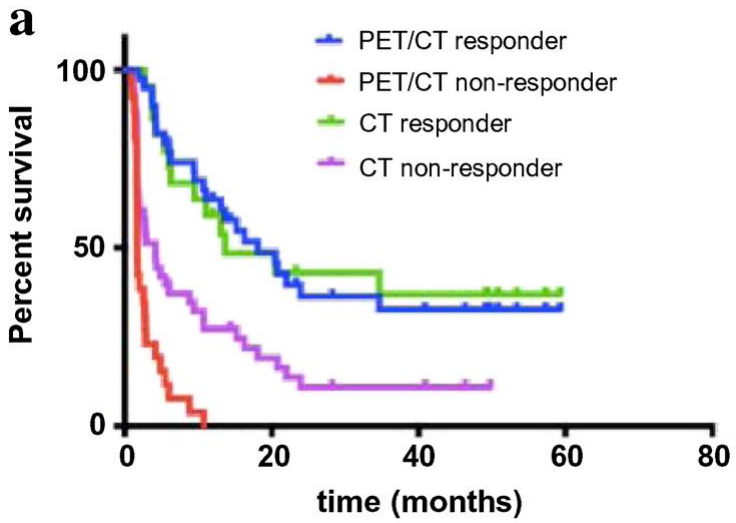
EVIDENS

Review

FDG-PET/CT Versus Contrast-Enhanced CT for Response Evaluation in Metastatic Breast Cancer: A Systematic Review

Fredrik Helland [1], Martine Hallin Henriksen [1], Oke Gerke [1,2], Marianne Vogsen [1,2,3,4], Poul Flemming Høilund-Carlsen [1,2,4] and Malene Grubbe Hildebrandt [1,2,4,5,*]

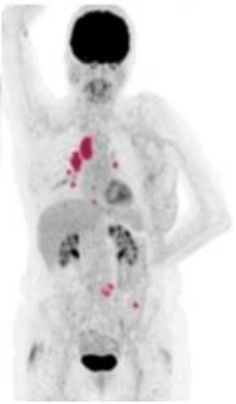
Helland F, et al.Diagnostics (Basel). 2019 Aug 27;9(3):106. doi: 10.3390/diagnostics9030106.



Riedl, C et al. Comparison of FDG-PET/CT and contrast-enhanced CT for monitoring therapy response in patients with Metastatic breast cancer, EJNMMI (2017) 44: 1428-1437

Responsevaluering MBC

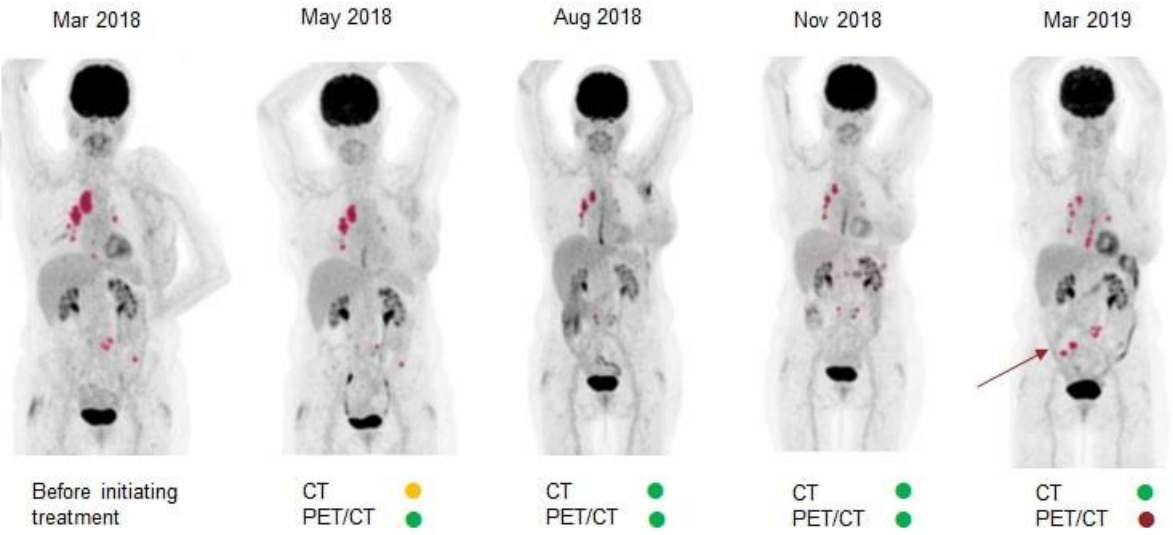
Mar 2018



Before initiating treatment

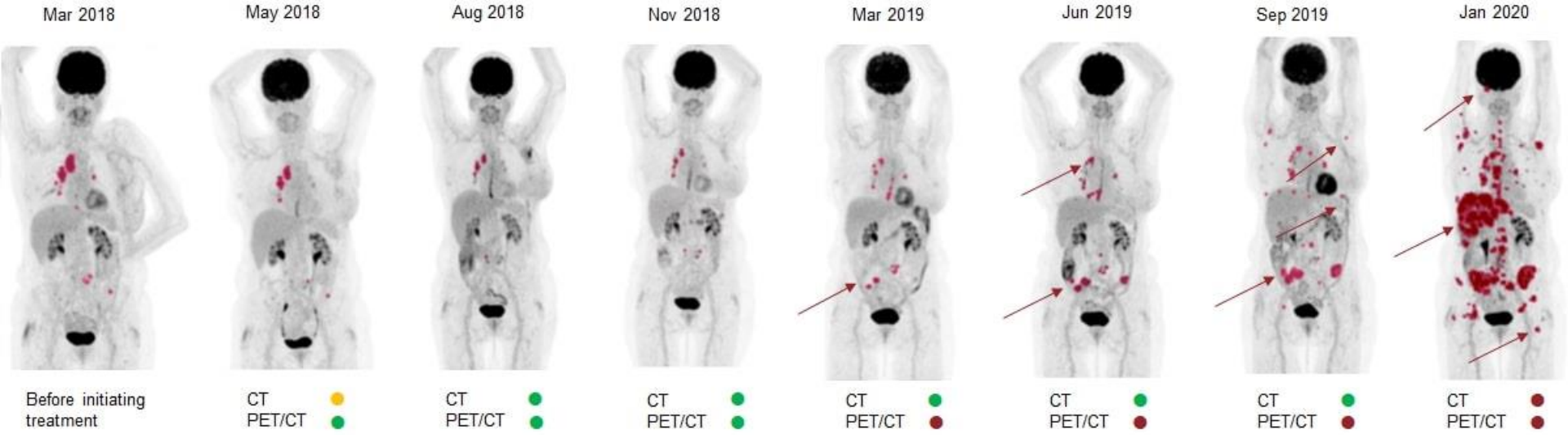
Vogsen M, et al. J Nucl Med. 2022 Oct 7:jnumed.121.263358. doi: 10.2967/jnumed.121.263358.

Responsevaluering MBC



Vogsen M, et al. J Nucl Med. 2022 Oct 7:jnumed.121.263358. doi: 10.2967/jnumed.121.263358.

Responsevaluering MBC



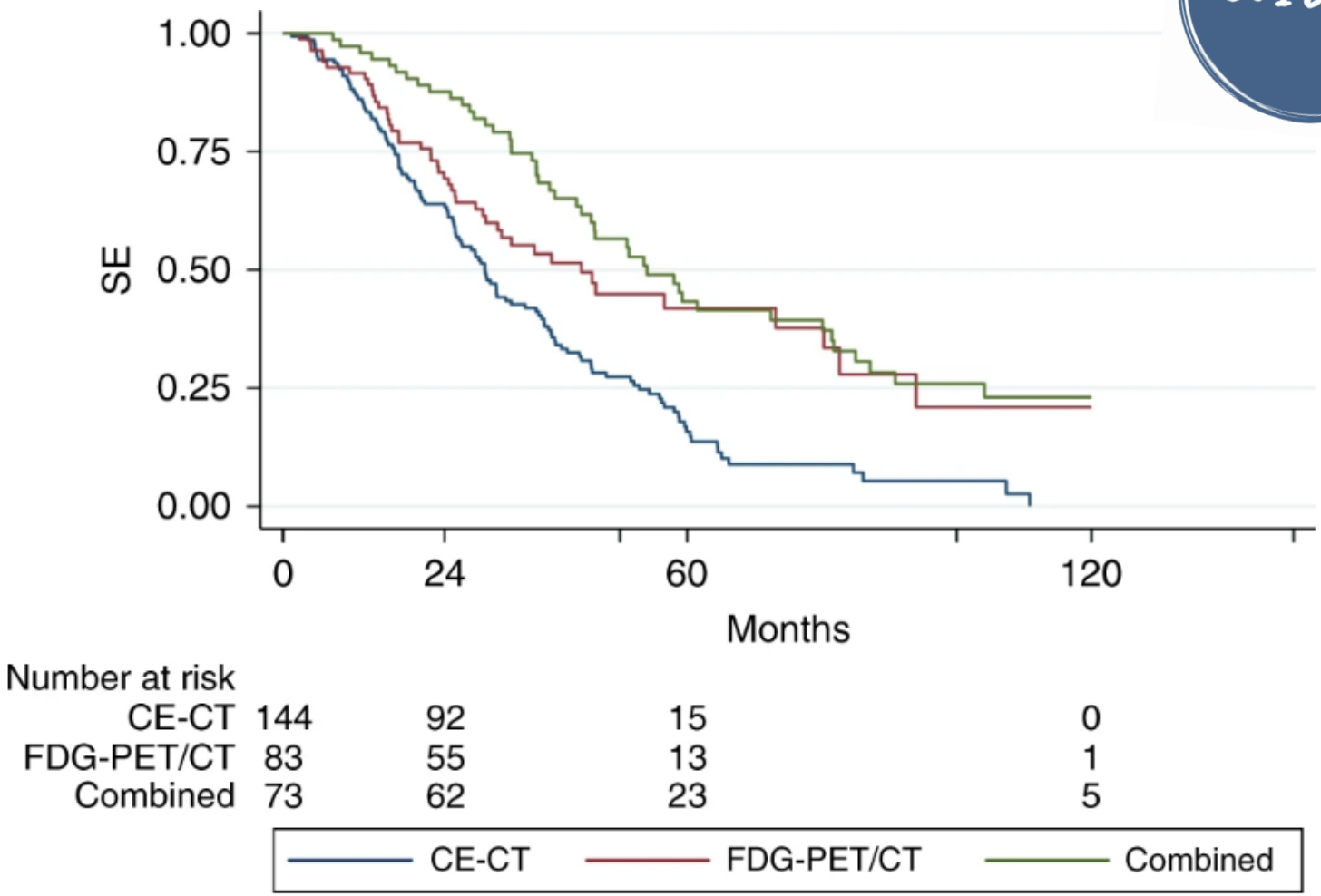
Regression
No change
Progression

In 87 patients, progression was seen

- **first on PET/CT in 43 (49.4%) (a median of 6.0 mo. delay by CT)**
- first on CT in 1 (1.2%)
- at the same time on both in 11 (12.6%)
- no progression was seen during follow-up in 32 (36.8%)

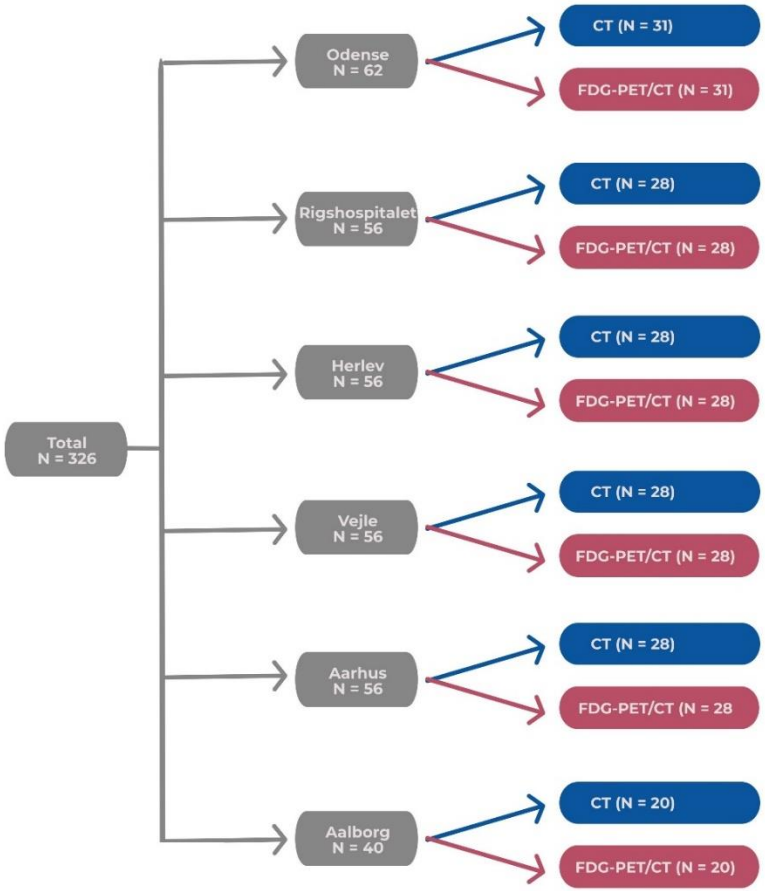
Vogsen M, et al. J Nucl Med. 2022 Oct 7:jnumed.121.263358. doi: 10.2967/jnumed.121.263358.

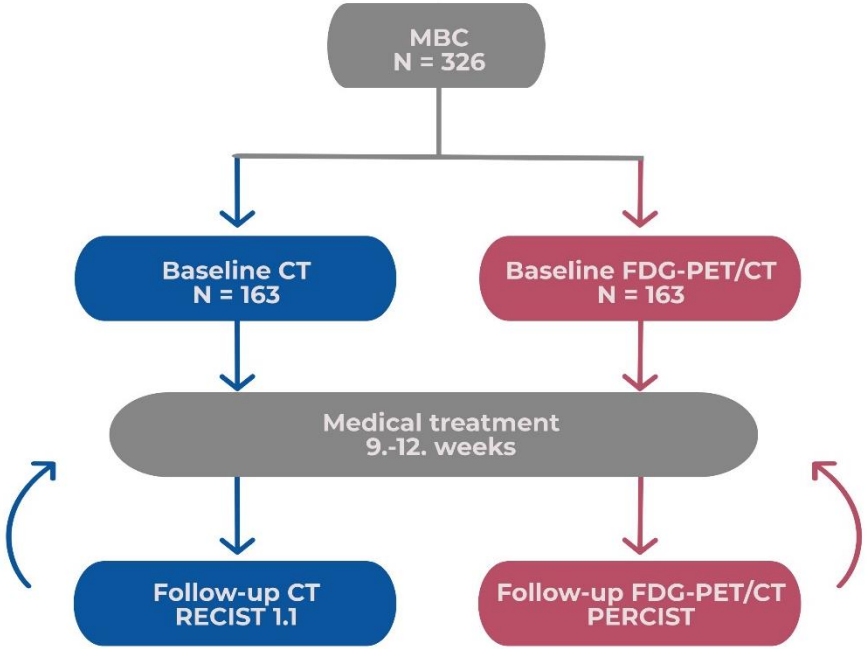
Responsevaluering MBC



Naghavi-Behzad et al., Br J Cancer, 2022 https://doi.org/10.1038/s41416-021-01654-w

MONITOR - DBCG trial





NEW

DBCG retninglinje

FORESLÅET 2022

Responsmonitorering af metastatisk brystkræft

5. **Intervallet mellem baseline billeddiagnostik og behandlingsstart bør ikke overstige 4 uger. Såfremt dette ikke er opnået, bør der laves ny baseline billeddiagnostik (D)**

6. **Responsevaluering bør generelt forgå med 2-4 måneders intervaller. Monitoreringsintervallet bør ikke afkortes, men ved indolent sygdom, kan intervallet forlænges (D)**

7. **Targetlæsioner bør monitoreres med en billedmodalitet, hvorpå de metastatiske læsioner er synlige. Det kan fx være CT, MR, knogleskintigrafi/NaF-PET/CT eller FDG-PET/CT. Såfremt læsionerne er målbare på RECIST, anbefales disse for at sikre standardiseret responsevaluering (D)**

DBCG & ESMO guidelines

FORESLÅET 2022

Klinik	Anbefalet udredning	Supplerende /alternativ udredning	Anbefalet udredning	Supplerende /alternativ udredning
	DBCG		ESMO	
MBC LABC Lokoregionalt recidiv	FDG-PET/CT (HA-T-AB-PEL)	**CT (T-AB) + BS eller MR**	CT (T-AB) + BS	FDG-PET/CT

DBCG & ESMO guidelines

FORESLÅET 2022

Klinik	Anbefalet udredning	Supplerende /alternativ udredning	Anbefalet udredning	Supplerende /alternativ udredning
	DBCG		ESMO	
MBC LABC Lokoregionalt recidiv	FDG-PET/CT (HA-T-AB-PEL)	**CT (T-AB) + BS eller MR**	CT (T-AB) + BS	FDG-PET/CT
Respons-evaluering MBC	Billedmodalitet hvorpå metastaser er synlige RECIST ved målbare læsioner	CT MR FDG PET/CT NaF PET/CT BS	Target lesion	FDG-PET/CT (bone only/pre-dominant MBC)

Forfattergruppe

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THANK YOU